



Agency for Healthcare Research and Quality
Advancing Excellence in Health Care



NATIONAL
GUIDELINE
CLEARINGHOUSE

General

Guideline Title

Clinical policy: critical issues in the evaluation and management of adult patients in the emergency department with asymptomatic elevated blood pressure.

Bibliographic Source(s)

Wolf SJ, Lo B, Shih RD, Smith MD, Fesmire FM, American College of Emergency Physicians Clinical Policies Committee. Clinical policy: critical issues in the evaluation and management of adult patients in the emergency department with asymptomatic elevated blood pressure. *Ann Emerg Med.* 2013 Jul;62(1):59-68. [24 references] [PubMed](#)

Guideline Status

This is the current release of the guideline.

This guideline updates a previous version: Decker WW, Godwin SA, Hess EP, Lenamond CC, Jagoda AS, ACEP Clinical Policies Subcommittee (Writing Committee) on Asymptomatic Hypertension in the ED. Clinical policy: critical issues in the evaluation and management of adult patients with asymptomatic hypertension in the emergency department. *Ann Emerg Med.* 2006 Mar;47(3):237-49. [28 references]

Recommendations

Major Recommendations

Definitions for the strength of evidence (Class I-III) and strength of recommendations (Level A-C) are repeated at the end of the Major Recommendations.

1. In emergency department (ED) patients with asymptomatic elevated blood pressure, does screening for target organ injury reduce rates of adverse outcomes?

Patient Management Recommendations

Level A recommendations. None specified.

Level B recommendations. None specified.

Level C recommendations.

1. In ED patients with asymptomatic markedly elevated blood pressure, routine screening for acute target organ injury (e.g., serum creatinine, urinalysis, electrocardiogram [ECG]) is not required.
2. In select patient populations (e.g., poor follow-up), screening for an elevated serum creatinine level may identify kidney injury that affects disposition (e.g., hospital admission).

2. In patients with asymptomatic markedly elevated blood pressure, does ED medical intervention reduce rates of adverse outcomes?

Patient Management Recommendations

Level A recommendations. None specified.

Level B recommendations. None specified.

Level C recommendations.

1. In patients with asymptomatic markedly elevated blood pressure, routine ED medical intervention is not required.
2. In select patient populations (e.g., poor follow-up), emergency physicians may treat markedly elevated blood pressure in the ED and/or initiate therapy for long-term control. [Consensus recommendation]
3. Patients with asymptomatic markedly elevated blood pressure should be referred for outpatient follow-up. [Consensus recommendation]

Definitions:

Strength of Evidence

Literature Classification Schema*

Design/Class	Therapy†	Diagnosis‡	Prognosis§
1	Randomized, controlled trial or meta-analysis of randomized trials	Prospective cohort using a criterion standard or meta-analysis of prospective studies	Population prospective cohort or meta-analysis of prospective studies
2	Nonrandomized trial	Retrospective observational	Retrospective cohort Case control
3	Case series Case report Other (e.g., consensus, review)	Case series Case report Other (e.g., consensus, review)	Case series Case report Other (e.g., consensus, review)

*Some designs (e.g., surveys) will not fit this schema and should be assessed individually.

†Objective is to measure therapeutic efficacy comparing interventions.

‡Objective is to determine the sensitivity and specificity of diagnostic tests.

§Objective is to predict outcome, including mortality and morbidity.

Approach to Downgrading Strength of Evidence*

	Design/Class		
Downgrading	1	2	3
None	I	II	III
1 Level	II	III	X
2 Levels	III	X	X
Fatally Flawed	X	X	X

*See the "Description of Methods Used to Analyze the Evidence" field for more information.

Strength of Recommendations

Level A recommendations. Generally accepted principles for patient management that reflect a high degree of clinical certainty (i.e., based on strength of evidence Class I or overwhelming evidence from strength of evidence Class II studies that directly address all of the issues)

Level B recommendations. Recommendations for patient management that may identify a particular strategy or range of management strategies that

reflect moderate clinical certainty (i.e., based on strength of evidence Class II studies that directly address the issue, decision analysis that directly addresses the issue, or strong consensus of strength of evidence Class III studies)

Level C recommendations. Other strategies for patient management that are based on Class III studies or, in the absence of any adequate published literature, based on panel consensus. In instances in which consensus recommendations are made, this is specifically indicated next to the recommendation.

There are certain circumstances in which the recommendations stemming from a body of evidence should not be rated as highly as the individual studies on which they are based. Factors such as heterogeneity of results, uncertainty about effect magnitude and consequences, and publication bias, among others, might lead to such a downgrading of recommendations.

Clinical Algorithm(s)

None provided

Scope

Disease/Condition(s)

Asymptomatic elevated blood pressure

Guideline Category

Evaluation

Management

Screening

Clinical Specialty

Emergency Medicine

Internal Medicine

Intended Users

Physicians

Guideline Objective(s)

To address the following critical questions:

- In emergency department (ED) patients with asymptomatic elevated blood pressure, does screening for target organ injury reduce rates of adverse outcomes?
- In patients with asymptomatic markedly elevated blood pressure, does ED medical intervention reduce rates of adverse outcomes?

Target Population

Patients aged 18 years or older who present to the emergency department (ED) with asymptomatic elevated blood pressure *without* signs and symptoms of acute target organ injury

Note: This guideline is not intended to address the care of:

Patients who present to the ED with signs or symptoms of acute hypertensive emergencies (i.e., patients with clinical findings that suggest acute target organ injury such as acute stroke, cardiac ischemia, pulmonary edema, encephalopathy, and congestive heart failure)

Pregnant patients

Patients with end-stage renal insufficiency

Patients with emergent conditions that are likely to cause elevated blood pressure not directly related to acute target organ injury (e.g., trauma, other pain syndromes)

Patients with acute presentations of serious medical conditions associated with hypertension such as stroke, myocardial infarction, and congestive heart failure

Interventions and Practices Considered

1. Screening for elevated creatinine (as indicated)
2. Initiation of treatment to lower blood pressure (as indicated)
3. Referral to outpatient follow-up

Major Outcomes Considered

- Adverse effects
- Long-term target organ injury
- Morbidity
- Mortality

Methodology

Methods Used to Collect/Select the Evidence

Hand-searches of Published Literature (Primary Sources)

Hand-searches of Published Literature (Secondary Sources)

Searches of Electronic Databases

Description of Methods Used to Collect/Select the Evidence

Searches of MEDLINE and MEDLINE InProcess were performed. All searches were limited to English language sources and human studies. Specific key words/phrases and years used in the searches are identified under each critical question. In addition, relevant articles from the bibliographies of included studies and more recent articles identified by committee members and reviewers were included.

Number of Source Documents

Six articles

Methods Used to Assess the Quality and Strength of the Evidence

Expert Consensus

Weighting According to a Rating Scheme (Scheme Given)

Rating Scheme for the Strength of the Evidence

Strength of Evidence

Literature Classification Schema*

Design/Class	Therapy†	Diagnosis‡	Prognosis§
1	Randomized, controlled trial or meta-analysis of randomized trials	Prospective cohort using a criterion standard or meta-analysis of prospective studies	Population prospective cohort or meta-analysis of prospective studies
2	Nonrandomized trial	Retrospective observational	Retrospective cohort Case control
3	Case series Case report Other (e.g., consensus, review)	Case series Case report Other (e.g., consensus, review)	Case series Case report Other (e.g., consensus, review)

*Some designs (e.g., surveys) will not fit this schema and should be assessed individually.

†Objective is to measure therapeutic efficacy comparing interventions.

‡Objective is to determine the sensitivity and specificity of diagnostic tests.

§Objective is to predict outcome, including mortality and morbidity.

Approach to Downgrading Strength of Evidence*

	Design/Class		
Downgrading	1	2	3
None	I	II	III
1 Level	II	III	X
2 Levels	III	X	X
Fatally Flawed	X	X	X

*See the "Description of Methods Used to Analyze the Evidence" field for more information.

Methods Used to Analyze the Evidence

Systematic Review with Evidence Tables

Description of the Methods Used to Analyze the Evidence

All articles used in the formulation of this clinical policy were graded by at least two subcommittee members for strength of evidence. The articles were classified by the subcommittee members into three classes of evidence on the basis of the design of the study, with design 1 representing the strongest design and design 3 representing the weakest design for therapeutic, diagnostic, and prognostic clinical reports, respectively (see the "Rating Scheme for the Strength of the Evidence" field). Articles were then graded on dimensions related to the study's methodological features, including but not necessarily limited to randomization processes, blinding, allocation concealment, methods of data collection, outcome measures and their assessment, selection and misclassification biases, external validity, generalizability, and sample size. Articles received a final grade (Class I, II, III) on the basis of a predetermined formula, taking into account the design and study quality (Appendix B in the original guideline document). Articles identified with fatal flaws or that were not relevant to the critical question received an "X" grade and were not used in formulating recommendations for this policy. Grading was done with respect to the specific critical questions; thus, the level of evidence for any one study may vary according to the question. As such, it was possible for a single article to receive different levels of grading as different critical questions were answered from the same study. Question-specific level of evidence grading may be found in the Evidentiary Table included at the end of the

Methods Used to Formulate the Recommendations

Expert Consensus

Description of Methods Used to Formulate the Recommendations

This policy is a product of the American College of Emergency Physicians (ACEP) clinical policy development process, including expert review, and is based on the existing literature; where literature was not available, consensus of emergency physicians was used.

Rating Scheme for the Strength of the Recommendations

Clinical findings and strength of recommendations about patient management were then made according to the following criteria:

Strength of Recommendations

Level A recommendations. Generally accepted principles for patient management that reflect a high degree of clinical certainty (i.e., based on strength of evidence Class I or overwhelming evidence from strength of evidence Class II studies that directly address all of the issues).

Level B recommendations. Recommendations for patient management that may identify a particular strategy or range of management strategies that reflect moderate clinical certainty (i.e., based on strength of evidence Class II studies that directly address the issue, decision analysis that directly addresses the issue, or strong consensus of strength of evidence Class III studies).

Level C recommendations. Other strategies for patient management that are based on Class III studies or, in the absence of any adequate published literature, based on panel consensus. In instances in which consensus recommendations are made, this is specifically indicated next to the recommendation.

There are certain circumstances in which the recommendations stemming from a body of evidence should not be rated as highly as the individual studies on which they are based. Factors such as heterogeneity of results, uncertainty about effect magnitude and consequences, and publication bias, among others, might lead to such a downgrading of recommendations.

Cost Analysis

A formal cost analysis was not performed and published cost analyses were not reviewed.

Method of Guideline Validation

External Peer Review

Internal Peer Review

Description of Method of Guideline Validation

Expert review comments were received from emergency physicians, family physicians, cardiologists, nephrologists, and individual members of the American Academy of Family Physicians, the American Heart Association Council for High Blood Pressure Research, the American Society of Nephrology, and the Emergency Nurses Association. Their responses were used to further refine and enhance this policy; however, their responses do not imply endorsement of this clinical policy.

Approved by the American College of Emergency Physicians (ACEP) Board of Directors, February 6, 2013.

Evidence Supporting the Recommendations

Type of Evidence Supporting the Recommendations

The type of supporting evidence is identified and graded for each recommendation (see the "Major Recommendations" field).

Benefits/Harms of Implementing the Guideline Recommendations

Potential Benefits

Appropriate management of patients with asymptomatic elevated blood pressure in the emergency department (ED)

Potential Harms

It is generally accepted that the rapid lowering of markedly elevated blood pressure in the asymptomatic patient has the potential to do harm.

Qualifying Statements

Qualifying Statements

- Policy statements and clinical policies are the official policies of the American College of Emergency Physicians (ACEP) and, as such, are not subject to the same peer review process as articles appearing in the print journal. Policy statements and clinical policies of ACEP do not necessarily reflect the policies and beliefs of *Annals of Emergency Medicine* and its editors.
- This policy is not intended to be a complete manual on the evaluation and management of patients with asymptomatic elevated blood pressure but rather a focused examination of critical issues that have particular relevance to the current practice of emergency medicine.
- It is the goal of the Clinical Policies Committee to provide an evidence-based recommendation when the medical literature provides enough quality information to answer a critical question. When the medical literature does not contain enough quality information to answer a critical question, the members of the Clinical Policies Committee believe that it is equally important to alert emergency physicians to this fact.
- Recommendations offered in this policy are not intended to represent the only diagnostic and management options that the emergency physician should consider. ACEP clearly recognizes the importance of the individual physician's judgment. Rather, this guideline defines for the physician those strategies for which medical literature exists to provide support for answers to the critical questions addressed in this policy.

Implementation of the Guideline

Description of Implementation Strategy

An implementation strategy was not provided.

Implementation Tools

Mobile Device Resources

For information about availability, see the *Availability of Companion Documents* and *Patient Resources* fields below.

Institute of Medicine (IOM) National Healthcare Quality Report Categories

IOM Care Need

Getting Better

Living with Illness

IOM Domain

Effectiveness

Safety

Identifying Information and Availability

Bibliographic Source(s)

Wolf SJ, Lo B, Shih RD, Smith MD, Fesmire FM, American College of Emergency Physicians Clinical Policies Committee. Clinical policy: critical issues in the evaluation and management of adult patients in the emergency department with asymptomatic elevated blood pressure. *Ann Emerg Med.* 2013 Jul;62(1):59-68. [24 references] [PubMed](#)

Adaptation

Not applicable: The guideline was not adapted from another source.

Date Released

2006 Mar (revised 2013 Jul)

Guideline Developer(s)

American College of Emergency Physicians - Medical Specialty Society

Source(s) of Funding

American College of Emergency Physicians (ACEP)

Guideline Committee

American College of Emergency Physicians (ACEP) Clinical Policies Subcommittee (Writing Committee) on Asymptomatic Hypertension

Composition of Group That Authored the Guideline

Clinical Policies Subcommittee (Writing Committee) on Asymptomatic Hypertension Members: Stephen J. Wolf, MD (Subcommittee Chair); Bruce Lo, MD, RDMS; Richard D. Shih, MD; Michael D. Smith, MD; Francis M. Fesmire, MD (Committee Chair)

American College of Emergency Physicians (ACEP) Clinical Policies Committee (Oversight Committee) Members: Francis M. Fesmire, MD (Chair 2011-2013); Douglas Bernstein, MD (EMRA Representative 2011-2013); Deena Brecher, MSN, RN, APN, ACNS-BC, CEN, CPEN (ENA Representative 2012-2013); Michael D. Brown, MD, MSc; John H. Burton, MD; Deborah B. Diercks, MD, MSc; Steven A. Godwin, MD; Sigrid A. Hahn, MD; Jason S. Haukoos, MD, MSc (Methodologist); J. Stephen Huff, MD; Bruce Lo, MD, RDMS; Sharon E.

Mace, MD; Edward R. Melnick, MD; Deborah J. Nazarian, MD; Susan B. Promes, MD; Richard D. Shih, MD; Scott M. Silvers, MD; Stephen J. Wolf, MD; Stephen V. Cantrill, MD (Liaison with Quality and Performance Committee); Robert E. O'Connor, MD, MPH (Board Liaison 2010- 2013); Rhonda R. Whitson, RHIA, Staff Liaison, Clinical Policies Committee and Subcommittees

Financial Disclosures/Conflicts of Interest

Relevant industry relationships: There were no relevant industry relationships disclosed by the subcommittee members. Relevant industry relationships are those relationships with companies associated with products or services that significantly impact the specific aspect of disease addressed in the critical question.

Guideline Endorser(s)

Emergency Nurses Association - Professional Association

Guideline Status

This is the current release of the guideline.

This guideline updates a previous version: Decker WW, Godwin SA, Hess EP, Lenamond CC, Jagoda AS, ACEP Clinical Policies Subcommittee (Writing Committee) on Asymptomatic Hypertension in the ED. Clinical policy: critical issues in the evaluation and management of adult patients with asymptomatic hypertension in the emergency department. Ann Emerg Med. 2006 Mar;47(3):237-49. [28 references]

Guideline Availability

Electronic copies: Available in Portable Document Format (PDF) from the [American College of Emergency Physicians \(ACEP\) Web site](#) .

A version of the guideline optimized for mobile devices is available from the [ACEP Web site](#) .

Availability of Companion Documents

None available

Patient Resources

None available

NGC Status

This NGC summary was completed by ECRI on April 13, 2006. The information was verified by the guideline developer on June 1, 2006. This NGC summary was updated by ECRI Institute on September 11, 2013. The updated information was verified by the guideline developer on October 11, 2013.

Copyright Statement

This NGC summary is based on the original guideline, which is subject to the guideline developer's copyright restrictions. For more information, please refer to the [American College of Emergency Physicians \(ACEP\) Web site](#) .

Disclaimer

NGC Disclaimer

The National Guideline Clearinghouse[®] (NGC) does not develop, produce, approve, or endorse the guidelines represented on this site.

All guidelines summarized by NGC and hosted on our site are produced under the auspices of medical specialty societies, relevant professional associations, public or private organizations, other government agencies, health care organizations or plans, and similar entities.

Guidelines represented on the NGC Web site are submitted by guideline developers, and are screened solely to determine that they meet the [NGC Inclusion Criteria](#).

NGC, AHRQ, and its contractor ECRI Institute make no warranties concerning the content or clinical efficacy or effectiveness of the clinical practice guidelines and related materials represented on this site. Moreover, the views and opinions of developers or authors of guidelines represented on this site do not necessarily state or reflect those of NGC, AHRQ, or its contractor ECRI Institute, and inclusion or hosting of guidelines in NGC may not be used for advertising or commercial endorsement purposes.

Readers with questions regarding guideline content are directed to contact the guideline developer.